

## ABSTRACT

A silicon production reactor comprising a reaction vessel and heating means, said reaction vessel comprising a vertically extending wall and a space surrounded by the wall, said heating means being capable of heating at least a part, including lower end portion, of the wall's surface facing the space to a temperature of not lower than the melting point of silicon, said silicon production reactor being adapted to flow raw gas for silicon deposition from an upper part of the space of the reaction vessel toward a lower part thereof, characterized in that the space of the reaction vessel is of slit form in cross-sectional view. This silicon production reactor is capable of attaining improvement with respect to problems encountered at apparatus scaleup, such as decrease of reactivity of raw gas and generation of by-products, thereby accomplishing a striking enhancement of production efficiency.